

CLAIMS

What is claimed is:

- 1 1. A method for automatically detecting a specified type of data in a markup
2 language document and for providing functionality for any detected instances of the specified
3 data type in the markup language document, comprising the steps of:
4 loading the markup language document into a browser capable of visually rendering the
5 markup language document;
6 automatically identifying any instances of the specified type of data in the markup
7 language document;
8 visually rendering the loaded markup language document, wherein said step of visually
9 rendering the loaded markup language document comprises the step of:
10 visually rendering any identified instances of the specified data type in the
11 loaded markup language document such that each one of any identified
12 instances stands out visually in the visually rendered markup language
13 document; and
14 providing a functionality for performing or initiating a desired operation either with or
15 upon any of the identified instances standing out in the visually rendered markup
16 language document, wherein said functionality comprises the step of:
17 in response to only a single action being performed by a user of the browser in
18 relation to any of the identified instances standing out in the visually
19 rendered markup language document, performing or initiating a desired

20 operation either with or upon any of the identified instances standing out in
21 the visually rendered markup language document.

1 2. The method of claim 3, wherein the single action performed by the user of the
2 browser comprises the step of:

3 selecting at least one of the identified instances standing out in the visually rendered
4 markup language document.

1 3. The method of claim 2, wherein said step of selecting comprises the step of:
2 using a cursor and a selecting means to click the at least one of the identified instances
3 standing out in the visually rendered markup language document.

1 4. The method of claim 3, wherein said selecting means comprises at least one of a
2 computer mouse, a touchpad, a keyboard, a trackball, a voice command device, and a joystick.

1 5. The method of claim 1, wherein the desired operation comprises at least one of
2 storing any of the identified instances of the specified data type in at least one memory location
3 designated for the specified type of data; transmitting any of the identified instances of the
4 specified data type to a designated piece of hardware or software in order that the designated
5 piece of hardware/software perform a desired action either with or upon any of the identified
6 instances of the specified data type; and providing the user of the browser with a number of
7 options of what action to perform with or upon any of the identified instances of the specified
8 data type.

1 6. The method of claim 1, wherein said steps of loading the markup language
2 document into the browser and automatically identifying any instances of the specified type of
3 data in the markup language document are performed at substantially the same time.

1 7. The method of claim 1, wherein the specified data type comprises at least one of a
2 category of text, a category of picture file, a category of audio file, and an attribute of a picture or
3 audio file.

1 8. The method of claim 7, wherein the category of text is at least one of a telephone
2 number and a mailing address.

1 9. The method of claim 1, wherein the step of visually rendering any identified
2 instances of the specified data type in the loaded markup language document such that each one
3 of any identified instances stands out visually in the visually rendered markup language
4 document comprises the step of:

5 highlighting each one of any identified instances in the visually rendered markup
6 language document.

1 10. The method of claim 1, wherein the markup language comprises at least one of
2 HTML and XML.

1 11. A method for automatically detecting a specified type of data in an HTML or
2 XML document (HTML/XML document) and for performing or initiating a desired operation

3 either with or upon at least one selected instance of the specified data type in the HTML/XML
4 document, comprising the steps of:

5 loading the HTML/XML document into a browser of HTML/XML documents
6 (HTML/XML browser);

7 automatically detecting any instance of the specified data type in the HTML/XML
8 document;

9 displaying the loaded HTML/XML document in the HTML/XML browser;

10 highlighting any detected instance of the specified data type in the displayed
11 HTML/XML document; and

12 when a user of the HTML/XML browser selects at least one highlighted instance of the
13 specified data type in the displayed HTML/XML document, performing or
14 initiating a desired operation either with or upon said at least one selected instance
15 of the specified data type.

1 12. The method of claim 11, wherein the step of detecting any instance of the
2 specified data type in the HTML/XML document comprises the step of:

3 parsing a run-time Document Object Model (DOM) of the HTML/XML document.

1 13. The method of claim 12, wherein the step of parsing a run-time Document Object
2 Model (DOM) of the HTML/XML document comprises the step of:

3 inserting programming code into the run-time DOM of the HTML/XML document,
4 wherein said inserted programming code parses the run-time DOM.

1 14. The method of claim 13, wherein the inserted programming code parses the run-
2 time DOM using at least one expression string, wherein said at least one expression string
3 describes the object characteristics of the specified data type.

1 15. The method of claim 14, further comprising the steps of:
2 receiving feedback from the user concerning an undetected instance of the specified
3 data type; and
4 using the user feedback in order to detect said undetected instance in the future, by
5 performing at least one step of:
6 modifying the at least one expression string; and
7 adding at least one other expression string.

1 16. The method of claim 11, wherein the step of highlighting any detected instance of
2 the specified data type in the displayed HTML/XML document comprises the step of:
3 placing a span tag at any detected instance of the specified data type in the displayed
4 HTML/XML document, wherein said span tag also makes the detected instance
5 selectable by the user.

1 17. The method of claim 11, wherein the step of performing or initiating a desired
2 operation either with or upon said at least one selected instance of the specified data type
3 comprises the step of:
4 extracting said at least one selected instance of the specified data type.

1 18. The method of claim 17, wherein the step of performing or initiating a desired
2 operation either with or upon said at least one selected instance of the specified data type further
3 comprises the step of at least one of:

4 passing the extracted at least one selected instance of the specified data type to another
5 program;

6 storing the extracted at least one selected instance of the specified data type; and

7 transmitting the extracted at least one selected instance of the specified data type to
8 another software or hardware component in a computer system or network, wherein
9 the HTML/XML browser is running on a component of said computer system or
10 network.

1 19. The method of claim 11, wherein user of the HTML/XML browser selects at least
2 one highlighted instance of the specified data type in the displayed HTML/XML document by
3 performing only a single action.

1 20. The method of claim 11, wherein the user may use one of at least two techniques
2 to select at least one highlighted instance of the specified data type in the displayed HTML/XML
3 document.

1 21. The method of claim 20, wherein, if a first of the at least two selection techniques
2 is used by the user to select at least one highlighted instance of the specified data type, a menu of
3 selectable options is presented to the user, wherein the selectable options comprise desired

operations to perform or initiate with or upon the selected at least one highlighted instance of the specified data type.

22. A method for assisting a user in calling or storing a telephone number on a web page downloaded in a web browser, said web page comprising HTML or XHTML, comprising the steps of:

automatically detecting any instance of a telephone number in a downloaded web page;
providing functionality that (i) highlights any detected telephone number in the downloaded web page; and (ii) allows the user to select any highlighted detected telephone number in the downloaded web page;
if the user selects a highlighted detected telephone number, extracting the selected highlighted telephone number; and

at least one of:

passing the extracted telephone number to a telephony program in order that the telephony program initiate a telephone call; and
storing the extracted telephone number in memory.

23. The method of claim 22, wherein the step of automatically detecting any instance of the specified data type in the downloaded web page comprises the step of:

inserting programming code into the run-time Document Object Model (DOM) of the downloaded web page, wherein said inserted programming code parses the run-time DOM of the downloaded web page.

1 24. The method of claim 23, wherein the inserted programming code parses the run-
2 time DOM using at least one expression string, wherein the at least one expression string
3 describes at least one of North American formatted telephone numbers and international
4 formatted telephone numbers.

1 25. The method of claim 24, further comprising the steps of:
2 receiving feedback from the user concerning an undetected telephone number on the
3 downloaded web page; and
4 using the user feedback in order to detect a format of said undetected telephone number
5 in the future, by performing at least one step of:
6 modifying the at least one expression string; and
7 adding at least one other expression string.

1 26. The method of claim 21, wherein the step of providing functionality that (i)
2 highlights any detected telephone number in the downloaded web page; and (ii) allows the user
3 to select any highlighted detected telephone number in the downloaded web page comprises the
4 step of:
5 placing a span tag at a detected instance of telephone number in the downloaded web
6 page, wherein said span tag (i) highlights the detected telephone number in the
7 displayed web page; and (ii) makes the highlighted detected telephone number in
8 the displayed web page selectable by the user.

1 27. The method of claim 22, wherein the steps of automatically detecting any instance
2 of a telephone number and providing functionality that (i) highlights any detected telephone
3 number in the downloaded web page; and (ii) allows the user to select any highlighted detected
4 telephone number in the downloaded web page are performed by at least one of a proxy server
5 and a client browser.